CLAIMS

What is claimed is:

1. A method for determining a data rate for a digital data stream comprising a plurality of pulses, each pulse having a width, the method comprising:

directly measuring the width of each pulse from the plurality of pulses by a measuring cell utilizing RC time constants wherein each pulse width is represented by a measured width voltage; and

transferring said measured width voltage to a measurement node wherein said measurement node determines the measured width voltage of the minimum pulse width.

2. A method for determining a data rate for a digital data stream comprising a plurality of pulses, each pulse having a width, the method comprising:

directly measuring the width of each pulse from the plurality of pulses by a measuring cell utilizing RC time constants wherein each pulse width is represented by a measured width voltage;

transferring said measured width voltage to a measurement node wherein said measurement node determines the measured width voltage of the minimum pulse width;

converting the measured width voltage of the minimum pulse width from an analog to a digital value; and

determining a range within which the digital value falls, each range being associated with a different data rate.

3. A method for determining a data rate for a digital data stream, the digital data stream comprising a plurality of pulses, each pulse having a width, the method comprising:

measuring the width of each pulse from the plurality of pulses;

determining a minimum pulse width for the plurality of pulses; and

using the minimum pulse width to infer the data rate.

4. The method of claim 3 wherein the step of measuring the width of each pulse from the plurality of pulses comprises the substeps of:

causing a change of voltage across a capacitor for a duration of the pulse resulting in a voltage level of the capacitor for the pulse; and

measuring the voltage level of the capacitor.

5. The method of claim 4 wherein the step of determining the minimum pulse width for the plurality of pulses comprises the substep of:

determining a maximum voltage level for the plurality of pulses.

6. The method of claim 3 wherein the step of using the minimum pulse width to infer the data rate comprises the substep of:

converting the minimum pulse width to a digital signal.

7. The method of claim 6 wherein the step of using the minimum pulse width to infer the data rate further comprises the substep of:

determining a range of values within which the digital value falls, each range indicating a different data rate.

8. A system for determining a data rate for a digital data stream, the digital data stream comprising a plurality of pulses, each pulse having a width, the system comprising:

a plurality of measuring cells for measuring the width of a pulse from the plurality of pulses; and

a measurement node for determining a minimum pulse width for the plurality of pulses.

9. The system of claim 8 wherein each measuring cell of the plurality of measuring cells comprises:

a RC circuit for producing a measured width voltage having a value related to the duration of the pulse.

10. The system of claim 9 wherein each measuring cell of the plurality of measuring cells further comprises: a pulse switch activated by a pulse of the digital data stream, the switch being connected to the RC circuit for causing a change of voltage to occur across the capacitor for the pulse duration, resulting in a measured width voltage for that pulse.

11. The system of claim 10 wherein each measuring cell of the plurality of measuring cells further comprises a transfer switch connected to the RC circuit for transferring upon activation the measured width voltage to the measurement node.

12. The system of claim 11 wherein each measuring cell of the plurality of measuring cells further comprises a switch connected to the RC circuit for setting the voltage across the capacitor in the RC circuit to a predetermined level when a pulse duration is not being measured.

13. The system of claim 12 wherein one or more of the switches are embodied as analog metal oxide semiconductor field effect transistors (MOSFETs).

14. The system of claim 8 wherein the measurement node determines a maximum voltage for the plurality of pulses.

15. The system of claim 8 further comprising a timing controller for sequencing the plurality of measuring cells for measuring the widths of the plurality of pulses.

16. The system of claim 10 further comprising:

an analog to digital converter for converting the measured width voltage associated with the minimum pulse width to a digital value.

17. A system for determining a data rate for a digital data stream, the digital data stream comprising a plurality of pulses, each pulse having a width, the system comprising:

a plurality of measuring cells for measuring the width of a pulse from the plurality of pulses;

a measurement node for determining a minimum pulse width for the plurality of pulses;

a RC circuit for producing a measured width voltage having a value related to the duration of the pulse;

a timing controller for sequencing the plurality of measuring cells for measuring the widths of the plurality of pulses;

an analog to digital converter for converting the measured width voltage associated with the minimum pulse width to a digital value; and

a processor having access to the digital value and to a memory comprising a lookup table having ranges of values, each range being associated with a different data rate, wherein said processor determines the data rate by reading ranges from the lookup table to determine the range within which the digital value falls.